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TABLE OF CONTENTS

HISTORICAL FUND
of the
NAVY MEDICAL DEPARTMENT

A committee has been formed with representation from the Medical Corps, Dental Corps, Medical Service Corps, Nurse Corps, and Hospital Corps for the purpose of creating a fund to be used for the collection and maintenance of items of historical interest to the Medical Department. Such items will include, but will not be limited to, portraits, memorials, etc., designed to perpetuate the memory of distinguished members of the Navy Medical Department. These memorials will be displayed in the Bureau of Medicine and Surgery and at the National Naval Medical Center. Medical Department officers, active and inactive, are invited to make small contributions to the fund. It is emphasized that all donations must be on a strictly voluntary basis. Funds received will be deposited in a Washington, D. C. bank to the credit of the Navy Medical Department Historical Fund, and will be expended only as approved by the Committee or its successor and for the objectives stated.

It is anticipated that an historical committee will be organized at each of our medical activities. If you desire to contribute please do so through your local historical committee or send your check direct, payable to Navy Medical Department Historical Fund, and mail to:

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Heat Sterilization of Spinal Anesthetic Ampuls

Although spinal anesthesia has been practiced for 70 years, neurological complications resulting from its use continue to be reported. Yet, in one series of over 10,000 cases with careful use of spinal anesthesia, neurological complications were minor or absent. The occurrence of these complications has justified the study of the probable causes of neurological sequelae of spinal anesthesia. One cause may be the possible contamination of the anesthetic solution with chemicals used for cold sterilization of the ampuls. This contamination may occur through microscopic cracks in the ampuls. Autoclaving the spinal anesthetic ampuls has been suggested as a safer method of sterilization. Autoclaving presents several problems: the method and time necessary to sterilize the ampul has not been standardized, the amount of deterioration of anesthetic agents by this method is unknown, and the effect of injection of the caramelized dextrose has not been determined. If ampuls are autoclaved with the spinal anesthetic tray or setup, the ampuls are subjected to sterilization for a prolonged time (needed to insure sterilization of the large bundle) which in turn causes caramelization of dextrose and possible deterioration of the anesthetic agents. There are other objections to sterilization with the bundle; for example, the anesthetic agents which are not used would need to be discarded or resterilized, possibly causing further deterioration. An alternative would be to sterilize the ampuls separately enclosed in vials and to store them so that appropriate single ampuls of the anesthetic agent needed at the time of the spinal anesthesia could be selected. This would be inexpensive, would not subject ampuls to repeated heat exposure, and would provide free choice of agent for each spinal anesthesia.

The experiments described in this report were carried out in order to determine the minimum time and temperature necessary to sterilize the outside of the ampuls used for spinal anesthesia and to learn the extent of deterioration of anesthetic agents and epinephrine resulting from sterilization by heat.

Because only the outside of the smooth glass ampul was being sterilized, it was proposed that the time necessary for sterilization be reduced from that recommended for instruments and packs with their many rough surfaces and air pockets. It was further proposed that a large size ampul filled with solution would probably require a longer sterilization time than a smaller one, and an ampul containing a dry powder with a low specific heat would possibly require a shorter time than one containing a solution. Therefore, ampuls of different sizes with dry and liquid contents were tested for surface sterilization time at 120 C.

The ampuls to be tested were dipped into a 48-hour broth culture of Bacillus subtilis and drained of excess medium by placing them upon a sterile towel for 5 to 10 minutes. Thereafter, each ampul was placed in an individual glass container and the container closed with a cotton stopper.

All sterilization tests were prepared and completed in triplicate except the 5-ml. ampuls of solution which were prepared and treated in duplicate. Three of each type of ampul were prepared for each sterilization time of 5, 7-1/2, 10, 15, and 20 minutes respectively. After preparation, the ampuls were placed in the autoclave and the steam turned on. Timing was begun only when the thermometer registered 120 C. After the proposed time lapse for each test, the sterilizer was brought to atmospheric pressure as rapidly as the steam could be evacuated from the chamber. Test ampuls were removed immediately.

The results of this series of experiments which included the sterilization of 1 ml., 2 ml., 5 ml., and 20 ml. -ampuls containing solution, and of 5 ml. -ampuls containing a crystalline anesthetic are presented in a table.

Generally, the 5 minutes of exposure killed all but a few of the Bacillus subtilis spores with the exception that the specific heat requirements of the larger 20 ml. ampuls allowed a much higher incidence of survival at the 5-minute level. There was a total of only 4 organisms which survived the 15-minute exposure, and these were found on the small 1 ml. and 2 ml. -ampuls. As was expected, the 20-minute exposure was lethal to all spores and vegetative organisms adhering to the ampuls after submersion in the liquid culture.

The larger volume of liquid in the 20 ml. -ampul not only increased the survival time of the adhering organisms as determined by the greater number of organisms which survived the 5-minute exposure, but it also proved more lethal at the 15-minute exposure level because of the longer exposure to the accumulated heat contained in the larger volume of fluid. In any event, the authors believe that under the conditions of the operating room, sterilization at 120 C. for 15 minutes would be adequate to kill spores and would present a sterile ampul for use by the anesthesiologist at the operating table. It must be remembered that the conditions of this test were rigorous and weighted in favor of survival of the organisms. The presence of dried culture medium on the surface of the ampul has a protective effect, and the great numbers of organisms with which the ampuls were contaminated increased the chances many fold of one or two surviving a 15-minute exposure to the sterilizing temperature of 120 C. Even so, in the light of the stability of the drugs to multiple sterilization, a 20-minute exposure to heat at 120 C. would add a safety factor and could be used if no objectionable caramelization of glucose or harmful effects to other additives occurred.

This method of sterilization of spinal anesthetic ampuls (autoclaving for 15 minutes at 120 C.) has been used for the past 27 months in the Salt Lake County General Hospital, During this time, spinal anesthesia has been administered to more than 500 patients. No decrease in potency of the spinal anesthetic agents was detected. Spinal anesthetic ampuls were prepared as described and stored for 3 to 10 months. Bacteriological examination by culture methods showed them to have sterile surfaces. No change in the

color of the dextrose solution was noted. (Gerlich, N. A., Nicholes, P. S. Ph. D., Ballinger, C. M., Heat Sterilization of Spinal Anesthetic Ampuls: Anesthesiology, 19: 394-399, May - June 1958)

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Gantrimycin for Urinary Infections

This article discusses a new agent, gantrimycin, combining sulfisoxazole and oleandomycin, two proven effective agents, for the treatment of urinary tract infection. The work presented represents a pilot study in the use of this new combination of a sulfonamide with an antibiotic. The results of this introductory study of this new combined drug indicate that it has a definite place in the treatment of urinary infection. In brief, 52% of patients treated in this series with gantrimycin showed an excellent response. Additional patients showed gratifying improvement and in only a few instances was the trial therapy considered a complete failure. It is of further interest that gantrimycin proved most effective against gram-positive organisms, effecting a success rate of approximately 80% in such infections.

Gantrimycin is a new combined drug consisting of sulfisoxazole (gantrisin) and a new antibiotic, oleandomycin. In the tablet form of the drug used in this study, the ratio was approximately five parts gantrisin to one part oleandomycin. Gantrisin is familiar, having been in clinical use for a number of years. It is sulfisoxazole and its wide clinical usefulness is well known.

Oleandomycin is a new antibiotic agent which is obtained from a strain of streptomyces antibioticus. Its phosphated form has been proven to be quite stable and unaffected by gastric and intestinal secretions. Extensive laboratory study has shown that oleandomycin exhibits a range of antibacterial activity similar to that of penicillin and erythromycin. Its effect is most marked against gram-positive microorganisms, particularly staphylococci and streptococci.

Because gantrisin alone does not always prove satisfactory in the treatment of virulent gram-positive urinary infections, the combination of gantrisin and oleandomycin has been introduced in an effort to provide more complete therapy in such cases. The combination utilized clinically in this study consisted of gantrisin 333 mg. and oleandomycin 75 mg. in each oral tablet. Dosage varied from two to five tablets daily with approximately 90% of patients in this series receiving the maximal dosage of five tablets four times daily. The period of therapy varied from 3 to 14 days, again with approximately 90% of patients in this series undergoing treatment for a period of 7 days.

Approximately one hundred patients were treated in this pilot study. They were drawn from patients seen in the urology out-patient clinic at

Duke Hospital and from the in-patient urology services of Duke Hospital and the Veterans Administration Hospital, Durham, N. C. In a number of these patients, the clinical and laboratory data were deemed insufficient for inclusion in this series. Sixty-three patients in whom data were sufficiently complete are included. A wide variety of urinary infections was encountered in this series as indicated by table. In general, patients having infection with known complicating factors of long standing were excluded from this series, although among those treated were patients with known urinary calculi, diabetes mellitus, neurogenic bladder, strictures, and in one instance, carcinoma of the bladder. Response to therapy was most gratifying in patients with acute uncomplicated infections. Over all, a 52% success rate was recorded in the use of gantrimycin in urinary tract infections.

A wide variety of infectious agents were encountered in this study as shown by table. It will be noted that the best response was obtained in the gram-positive group of organisms and the poorest response among the gram-negative microorganisms. The one exception to this statement is the rather gratifying response of E. coli infections to treatment with gantrimycin. Among this latter group of infections were three instances of hemorrhagic E. coli cystitis which responded promptly and dramatically to brief periods of therapy with gantrimycin.

Rigid standards were established for determination of a good response to therapy. Generally, patients were treated for one week with maximal dosage of five tablets of gantrimycin daily. At the end of one week of therapy, patients were reexamined, blood and urine levels of drugs were obtained, and follow-up urinalysis was accomplished. A urinary smear negative for bacteria was established as the initial criterion of improvement. In the absence of bacteria at the end of one week of therapy, gantrimycin therapy was discontinued. The patients were again seen at the end of an additional week at which time a final urine culture was obtained. If, at this time, the patients' urine proved sterile, therapy was considered a success. In addition, a number of patients were seen two to three weeks later and in each instance of previously recorded success, there had been no evidence of recurrence.

This work represents a pilot study only in the use of the combined drug, gantrimycin and further extensive clinical and laboratory study is indicated. Synergism—a phenomenon which can be demonstrated only in the laboratory—is suggested by this study, but extensive experience with the drug must be obtained before this can be effectively evaluated. Combined therapy of infectious disease has received strong criticism from some quarters. The authors' impression is that the use of two proven agents, such as gantrisin and oleandomycin, has a definite place in the therapy of urinary infections, particularly those caused by the gram-positive microorganisms. This study does not indicate that gantrimycin is a broad spectrum agent to be used to the exclusion of other efficacious drugs. However, preliminary results lead

to the impression that it is an effective and valuable drug in the treatment of selected cases of urinary tract infection. (Semans, J. H., Glenn, J. F., Gantrimycin Effective Combined Therapy of Urinary Infections: J. Urol., 79: 1018-1023, June 1958)

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Carcinoma of the Stomach in Hiroshima, Japan

More than 12 years have now passed since the atomic bomb exploded over Hiroshima. Concern about the possible effects of radiation on the well-being of the survivors is frequently expressed. Liebow, Warren, and De-Coursey, in their extensive report on atomic bomb casualties, remarked the need for a study of the relationship of radiation to a possible increase in the incidence of neoplasm as one of the major problems to be investigated in Hiroshima and Nagasaki.

When the program of the Atomic Bomb Casualty Commission was initiated in 1947, the investigation of this matter was one of the objectives. At that time, it was thought possible and, by some, even probable that the delayed effects of radiation would manifest themselves in striking increases in the incidence of a few specific diseases in the exposed populations. A rigid statistical control of the program was not instituted and, indeed, was impossible because of the varying degrees of cooperation offered to the Commission by the survivors. It was recognized that any difference in the incidence of a disease between exposed and nonexposed groups of patients would have to be quite pronounced in order to be detected and to withstand critical evaluation. Significant increase of the incidence of leukemia and cataracts in the exposed populations was demonstrated.

In 1955, it was decided that the Pathology Department of the Atomic Bomb Casualty Commission should undertake an investigation of the occurrence of carcinoma of the stomach in both exposed and nonexposed individuals in Hiroshima. The project as originally outlined was to determine any differences in incidence, age of onset, or type of gastric tumor occurring in the population group exposed to mass irradiation as compared to a non-exposed population. Carcinoma of the stomach was selected because of its prominent incidence among neoplasms in Japan.

The Pathology Department at the Hiroshima Atomic Bomb Casualty Commission initiated full operation in December 1948. The data listed at present in the diagnostic files have been collected by many Japanese and American pathologists who have been members of the department since that time. From December 1, 1948 through June 30, 1957, members of the department performed 880 necropsies upon adults. Of these 464 were exposed patients and 416 were nonexposed. During the same period, 11,119 surgical biopsy specimens were examined; 3185 were procured from exposed·

patients and 7915 from nonexposed patients. In 19 cases, the locality of the patient on August 6, 1945 could not be determined. In order for an individual to be classified as exposed to the atomic bomb, he must have been within 10,000 meters of the hypocenter when the bomb exploded. This figure was originally selected because one of the borders of Hiroshima City lies at that distance from the hypocenter.

In the necropsy series, the principal cause of death was neoplastic disease. Of the 880 patients, 291, or 33%, died as a result of a malignant neoplasm; 153 of these patients had been exposed and 138 had not been exposed to the explosion of the atomic bomb. About 68% of the neoplasms observed in the series were carcinomas and more than 35% of these were located in the stomach. Carcinoma of the stomach was the most common neoplasm listed in the diagnostic file for both the necropsy and the surgical pathology series.

The 535 patients in this series represent all cases of carcinoma of the stomach recorded in surgical or necropsy records from December 1, 1948 through June 30,1957. All were confirmed by histologic study. There were 342 males and 193 females. This represents a male to female ratio of 1.77 to 1. The male to female ratio in the nonexposed patients was 1.8 to 1, and in the exposed patients 1.7 to 1. Of the total number of specimens, 461 were first examined as surgical specimens and 74 were first encountered at necropsy. In the Autopsy Service, a total of 101 carcinomas of the stomach were observed, but 27 of these had been included in the series by reason of earlier surgical specimens. Of the 461 specimens first seen in the Surgical Pathology Service, 132 were procured from exposed patients. Of the 74 cases in the necropsy group, 55 were exposed patients. Of the males, 224 were nonexposed control cases and 118 were exposed. Of the females, 124 were nonexposed and 69 were exposed.

The males in the series ranged in age from 22 years to 85 years with an average age of 55.7. The females ranged from 23 to 81 years with an average age of 51 years. The average age of the nonexposed males was 53.6 years and the nonexposed females, 48.4 years. The average age of the exposed males was 59.4 years and the exposed females, 52 years.

Carcinoma of the stomach was listed in 535 cases in the surgical pathology and necropsy pathology records of the Hiroshima Atomic Bomb Casualty Commission between December 1, 1948 and June 30, 1957. Of these patients, 187 had been exposed to the explosion of the atomic bomb in Hiroshima. The cases in the exposed group were compared with those in the nonexposed group and no significant differences were found between these two groups for the average age at the time of diagnosis, the age distribution in 5-year age groups, the postoperative survival time, or the histologic pattern and location of the tumor in the stomach. The incidence of all neoplasms in the exposed and nonexposed groups was also calculated and found to be almost equal. The possibility that the definition of "exposure"

was too broad and was thus hiding effects in the patients exposed at 2500 meters or less was considered and the material was reexamined using 2500 meters from the hypocenter as the limit of exposure. The patients between 2500 and 10,000 meters were added to the control group. The incidence of carcinoma of the stomach and of all neoplasms was again calculated and again found to be approximately equal. In the cases treated by a surgical resection of the cancer through 1956, a follow-up was possible in 252 patients; 93 of these were still living, but only 7 had lived more than 5 years after the operation. Only one of these was an exposed patient. No significance was attached to this finding.

Carcinoma of the stomach is the most frequent neoplastic disease for both men and women in Japan. Its incidence and behavior in patients exposed and not exposed to the explosion of the atomic bomb in Hiroshima has been compared. No significant differences were found in these two groups. The study represents an 8-1/2 year survey ending almost 12 years after the atomic bombing of Hiroshima. (Murphy, E. S., Yasuda, A., Carcinoma of the Stomach in Hiroshima, Japan: Am. J. Path., XXXIV: 531-541, May-June 1958)

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Simple Excision of the Unattached Lamina for Spondylolysis

In spondylolysis and spondylolisthesis there is increasing evidence that the backache and leg pain are due not to instability of the lumbosacral joint as has been generally believed, but to the abnormal mobility of the unattached lamina. For this reason, the removal of the unattached lamina is beginning to replace the various techniques of spinal fusion in the treatment of this condition.

The term "spondylolysis" in its broadest sense infers a dissolution of any part of a vertebra, but common usage has restricted the term to a defect in the isthmus or pars interarticularis. The term is a poor one because the bony defect undoubtedly is due to aplasia rather than to dissolution. Spondylolisthesis is spondylolysis in which as a result of the lack of anchorage normally supplied by the inferior facets, there is a forward displacement of the body of the defective vertebra on that of the one below. Prespondylolisthesis has been used by a few authors to describe spondylolysis, but such a label is unwarranted because vertebral body displacement is not an invariable or even a prevailing consequence of the osseous defect.

In the absence of forward slipping (olisthesis), the diagnosis frequently is overlooked because the isthmus defect usually is not apparent in standard anterioposterior and lateral roentgenograms of the lumbosacral spine. When oblique views are made, spondylolysis emerges as a significant

entity in the differential diagnosis of low-back pain and sciatica. The incidence of the bony defect without regard to symptoms was studied by Willis. In examining 1520 human skeletons, he found a pars interarticularis defect in 5.09%.

In all patients upon whom the authors have operated for spondylolysis, there has been a poorly delimited fibrocartilaginous mass surrounding the pseudoarthrosis. In no instance, was the unattached lamina proved to be in direct contact with the nerve root. Such contact appeared to be prevented by a shelf of bone projecting caudally from the pedicle and partially covering the nerve root as it passed about the base of the pedicle. Because the nerve root is not well disclosed until after the unattached lamina and this bony shelf have been removed, the authors were unable to ascertain the exact mechanism of pain production. A bony spur on the posterior inferior margin of the body of the vertebra occasionally was found to be in contact with the nerve root where it rounded the pedicle to pass through the foramen. Forward displacement of the inferior articulating process or surrounding tissue reaction from increased motility at this site was not demonstrated to have compressed the underlying nerve roots.

No essential difference existed in the symptoms in cases of spondylolysis and those in which displacement of the body was present. This fact, together with the relief afforded by simple removal of the unattached lamina, indicates that displacement of the body is not the cause of the symptoms.

The essential feature of the operation is the complete removal of the unattached lamina, the ligamentum flavum, and the mass of tissue surrounding the pseudoarthrosis. This procedure necessitates a wide lateral exposure. The nerve roots are disclosed by removal by means of a small electric drill of the shelf-like projection from the pedicle. This shelf invariably covers the roots at least partially and seemingly protects them from compression by the unattached lamina.

The criterion for surgical intervention in spondylolysis with or without olisthesis is incapacitating pain. Patients with moderate distress may eventually come to operation, but certainly should not unless conservative measures have proved ineffective. The authors operated upon 15 patients who were postoperatively followed for periods of from 20 to 36 months. The results proved to be surprisingly good.

The operative results were: excellent, unrestricted activity with no backache or leg pain, 8 cases; good, unrestricted activity with occasional mild backache or leg pain, 4 cases; fair, unrestricted or slightly limited activity with recurrent mild backache or leg pain, 3 cases; poor, persistent backache or leg pain, 1 case.

Because the operation in these cases in no way weakens the spine, early mobilization is encouraged. If sciatic pain persists in the immediately postoperative period and can be increased by jugular compression, the possibility of intradural nerve sleeve adhesions is considered. This

condition is treated by increasing the spinal fluid pressure and thus distending the nerve root sleeve by placing a blood pressure cuff about the neck and inflating it to 40 mm. of mercury for 5 minutes several times a day. As advocated by Gill and associates, the authors also employed the following procedures: hydrocortisone in procaine is injected into the epidural space through the sacral hiatus, followed by passive or active straight-leg raising to mobilize the nerve roots and thus free them from possible remaining extradural adhesions.

The pain in spondylolysis and spondylolisthesis is not due to displacement of, or to movement between, the bodies of the involved vertebrae. It is produced by the abnormal mobility of the unattached lamina together with the pathologic tissues surrounding the false joint. Spinal fusion is unnecessary; it prolongs convalescence and may serve to substitute one painful pseudoarthrosis for another. (Todd, E. M., Gardner. W. J., Simple Excision of the Unattached Lamina for Spondylolysis: Surg. Gynec. & Obst., 106: 724-728, June 1958)

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Study of 812 Grand Multiparas

This article reviews the records of 812 grand multiparous patients delivered at the District of Columbia General Hospital from 1951 through 1955. A grand multiparous woman is defined as having had eight or more viable gestations.

This is a study of a large series coming from a single teaching hospital during the period since blood transfusions, antibiotics, and fibrinogen have been available. In addition, an accurate comparison was made with the incidence of complications in the over all clinic group under the same obstetrical management. There were no private patients in the series.

Of the 19,214 deliveries at the D. C. General Hospital during the period studied, there were 812 grand multiparas, an incidence of 4.2%. In the series and in the over all clinic group, the race distribution was the same, 95% Negro and 5% white. Only 53% of the grand multiparous patients received prenatal care as compared with 57% in the total clinic group. The parity, age, and weight distribution are outlined in a table.

Obstetrical complications are increased by grand multiparity. Although maternal mortality in the grand multiparas has been reduced in recent years, it follows that maternal risks must be greater than for the general clinic group. Various authors have shown some differences in the incidence of specific complications. Schram found no increase in the malpresentations in his review of grand multiparas. In contrast, Peckham showed that transverse lie was ten times as common in the para x as in the primigravida. In the present series, all malpresentations taken together

were increased twofold when the incidence in grand multiparas was compared with that in the general clinic. Peckham found that the incidence of placenta previa increased directly with parity. In the present study, there was no increase of placenta previa over the clinic incidence. Premature separation of the placenta occurred in 3% of the grand multiparas or more than three times the incidence in the clinic as a whole. This constitutes one of the most serious complications of grand multiparity.

Another serious complication reported among the grand multiparas was rupture of the uterus, although this was encountered only once in the present series. Observations made at the time of vaginal hysterectomy in patients who had borne eight or more viable babies may be relevant. A blunt probe or curette could be passed through the uterine wall with little resistance either at the time of diagnostic curettage or immediately after the uterus was removed. Microscopic sections showed the myometrium surrounding these vessels contained little elastic tissue. The myometrium of grand multiparas is probably weakened and may be liable to rupture during subsequent pregnancies. The abnormal stress of labor associated with malpresentations such as transverse lie would appear particularly hazardous.

Other complications in these grand multiparas were in keeping with those found in earlier studies. The incidence of twins, prolapsed cord, postpartum hemorrhage, large babies weighing over 9 pounds, and stillbirths was found to be about twice that of the general clinic population. The incidence of primary cesarean section in the grand multiparous patient was increased threefold. Abnormal presentation, cephalopelvic disproportion, and placenta previa were the most common indications for abdominal delivery. Preexisting hypertensive disease commonly occurred with grand multiparity. Age and obesity as well as parity are probably associated factors in this increased incidence of chronic hypertensive disease.

From this study, several therapeutic suggestions concerning the management of grand multiparous patients seem justified:

Because of the hazard of malpresentation, vaginal examinations should be done promptly whenever there is doubt concerning the presenting part. It is desirable to perform these examinations in a delivery room equipped for emergency cesarean section because transverse lie and prolapse of the cord may be encountered.

Inadequate progress in labor justifies x-ray pelvimetry. Even with normal pelvic dimensions, however, abdominal delivery may be indicated for excessvie-sized fetuses are common in the grand multiparous mothers. Multiparity and especially grand multiparity are no insurance against true cephalopelvic disproportion. Prompt recognition and early abdominal delivery may increase survival of these excessive-sized infants.

To prevent postpartum atony and bleeding, it is suggested that an intravenous infusion be started when the patient is taken to the delivery

room and that Pitocin be added after delivery of the fetal shoulders and continued for a few hours postpartum. Also, it is suggested that blood be made available for all grand multiparous patients prior to delivery.

Diagnostic dilatation and curettage should be performed with extreme gentleness in grand multiparas because the uteri of these patients are easily perforated.

(Nelson, J.H., Sandmeyer, M.W., A Study of 812 Grand Multiparas: Am. J. Obst. & Gynec., 75: 1262-1265, June 1958)

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Establishment of a Poison Control Center

Recent advances in pediatric therapy have improved mortality and morbidity statistics to the point that accidents have become the leading cause of death and injury in childhood. The five most common fatal accidents are falls, burns, poisoning, firearm accidents, and drowning.

This article presents the necessary steps in organizing a poison control center in a community hospital. This type of center must be distinguished from the large programs operated by municipal or state governments. The average community hospital does not have sufficient funds for the maintenance of full-time salaried directors, assistance, toxicologists, and clerks. In the authors' experience, a center can be operated efficiently, yet inexpensively, within the existing framework of the average community hospital with an initial outlay of less than three hundred ($300.00) dollars.

Step I. The first step is the appointment of a director and an assistant director who are members of the medical staff. Because the majority of accidental poisonings occur in children, the director should be a physician who devotes a large part of his time to pediatrics.

Step II. The second step is to determine the location of the center. The accident or emergency dispensary which is already staffed and organized to handle urgent cases affords the best spot in the average community hospital.

Step III. The third step is to determine the functions of the center and the best methods of implementing them.

The first function is the treatment and care of the poisoned patient. This requires the center to be prepared for even the most unusual type of poisoning. Necessary equipment, supportive drugs, and a large number of antidotes must be kept in one place so that nurses will not have to scurry about the hospital from drug room to tray room and lose vital time in starting treatment. The personnel of the dispensary must be instructed and supervised frequently by the director.

The second function is to prevent future poisonings and to educate the community in accident prevention. The mere existence of the poison

control center stimulates interest and brings the problem into focus. In Atlantic City, the newspapers have assisted materially by running pictorial feature stories of the activities of the Center; each story carries a message to the general public. The bulletin of the County Medical Society has carried informative articles about the Center to the rural physicians, among whom it has created considerable interest. Talks on the radio and to P. T. A. groups and to service clubs are a part of the program. Follow-up visits by a nurse to the home of each poisoned patient are of great educational value in the prevention of future trouble.

The third function is the maintenance of records and assistance in the compilation of statistics. Only through these figures are the State Department of Health, the Public Health Service, the National Clearinghouse, and the Federal Food and Drug Administration able to influence legislation, manufacturing, and merchandising toward the reduction of the poisoning hazard. The New Jersey State Department of Health compiles poisoning statistics based on reports from the various centers.

The fourth function is research. By study and analysis of the cases treated over a period of years, it is hoped to improve techniques and save more lives.

Step IV. The fourth step is the securing of necessary equipment, drugs, and antidotes. The equipment used in the Atlantic City Center is listed by chart; drugs and antidotes are similarly listed.

Step V. The fifth step is obtaining a reference library.

Step VI. The sixth step is the preparation of a form for the reporting of the poisoning case.

Step VII. The final step outlines the method of operation and staffing of the Center which is done by describing a case. The patient is either referred by a physician or comes in of his own volition. He is received by the dispensary clerk who immediately ushers him to the treatment room. The nurse and the intern on duty in the dispensary then assume charge. The intern proceeds with a cursory history and physical examination related to the poisoning. The reference library is then consulted for toxic ingredient and therapy. Meanwhile, the nurse has prepared the patient for treatment. This entire procedure takes about 5 to 10 minutes, and often less when the poison and treatment are well known, such as in the case of aspirin. The resident physician is called by the intern for more serious cases and the resident in turn consults the director when indicated.

While treatment is in progress, the dispensary clerk obtains administrative data from the parents and fills out the dispensary record and the poison control form. When dispensary treatment is finished, the intern completes the professional portion of the form.

If the patient is then sent home, the form is copied and a copy sent to the Child Federation of Atlantic City, a private charitable organization which cooperates with the Center. If the patient is admitted to the hospital,

the form follows the patient and becomes a part of his chart. After the patient has been discharged, the form is handled as previously stated.

A home follow-up visit is made by one of the nurses of the Child Federation. This visit is ostensibly to determine the patient's recovery, but actually to educate the family in accident prevention. This nurse completes the form, a copy of which is mailed to the State Department of Health for compilation of statistics. (Southard, S. C., Stewart, W. B., Matthews, W. F., The Mechanics of Establishing a Poison Control Center in a Community Hospital: J. Pediat., 52: 718-721, June 1958)

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Tennessee Four Quarter Plan in Dental Education

At the present time, the growing demand for more dental service and the tremendous surplus of qualified applicants for admission are putting heavy and increasing pressure on the dental schools to increase the number of dental graduates. Therefore, it is timely to examine the Tennessee Four Quarter Plan in dental education and review the results which it has achieved. It is possible to estimate accurately the Plan's major advantages and disadvantages and to determine with some degree of assurance if such a pattern in dental education is an effective means of increasing promptly, at minimal cost to both the student and the institution, the number and quality of dental graduates.

Because of the widespread demand for dental service and the surge of qualified applicants for admission to dental schools, the Board of Trustees of the University of Tennessee authorized the faculty of the College of Dentistry to develop detailed plans for the inauguration of the Tennessee Four Quarter Plan. In July 1946, the program was placed in operation and has continued to operate since that time.

This Plan for dental education is distinguished by two unique characteristics: (1) Freshmen (first quarter) students are admitted in four classes of equal size during the calendar year at quarterly intervals, and (2) each course of the curriculum is given each quarter of the calendar year.

It should be clearly understood that the Tennessee Plan is not the "accelerated program" as remembered from World War II. This is not a speed-up of the educational process, but in reality is a program by which an uninterrupted educational process of the same duration and the same content is conducted by eliminating the so-called summer vacations.

Under the Four Quarter Plan of admissions, a standard summer quarter is added to the three quarters that constitute the conventional academic year. Thirty-five students are admitted at quarterly intervals, January, March, July, and September, or 140 admissions each calendar year. Because University of Tennessee Dental students graduate in three

calendar years, the total student body is never more than 420 students. In order to graduate the same number of dentists on the standard academic year and the usual plan in dental education, it would be necessary to have a total student body of 560 students.

The Tennessee Plan requires the subdivision of the curriculum of instruction into "courses," each of which extends through one quarter only. The courses thus established are grouped to form a curriculum of 12 quarters of 11 weeks each. In arranging the courses, the student's load has been held to about 33 (clock) hours weekly. The courses presenting a given subject are arranged in logical sequence and in a continuous series. Presentation of general or fundamental subject matter by lectures or similar means is arranged so as to precede immediately, or proceed concurrently as described, the study of selected material in the laboratories or selected cases in the clinics. Most of the changes in the curriculum during the past 10 years have been made in an effort to secure the best sequence and best correlation of courses.

Under the Tennessee Plan, all students take the courses in the same sequence; otherwise, efforts to secure the best sequential arrangement and the best correlation of courses would be frustrated. This is possible only if the number of students admitted at a given time is limited to the number that can be taught as a group without sectioning, in laboratories, in clinics, and on hospital services. Facilities were constructed to take care of about 35 students in a section; therefore, a class of 35 students is admitted every 3 months.

From experience gained in the College of Medicine and conceived in 1946, it was anticipated that the Tennessee Four Quarter Plan would accomplish the following objectives:

1. Enable more students to be trained with the same physical facilities. The Plan gives the maximum number of young men and women the opportunity and privilege to study the profession of their choice and, thereby, helps to alleviate the dental manpower shortage for both the civilian population and the Armed Forces.
2. Enable students to interrupt their dental training on a flexible basis. Thus, it was hoped to encourage enrollment of students who were self-dependent or could expect very limited support only—especially students from the smaller communities. Such students could withdraw from school at the end of any quarter for a reasonable period of time to earn new funds. In like manner, students compelled to withdraw because of illness or other causes could return at the beginning of any quarter. Other students, retarded for scholastic reason, might repeat one quarter and gain a firm foundation for advancement without losing a year's time.
3. Insure a better distribution of graduates to smaller communities as a consequence of enrolling more students accustomed to life in these

communities and tied to these areas by sentimental attachments and financial advantages.

4. Enable students with adequate financial support to complete the standard dental curriculum in three calendar years.

5. Improve the quality of instructions by having instructors teach smaller classes which results in giving more students individual attention when needed.

6. Improve both the sequence and correlation of instruction by removing the necessity of rotating students without logical sequence through laboratory and clinical exercises.

7. Reduce the cost of dental education, particularly for the student. The Plan saves the student the cost of living for nine months and he gains the advantage of beginning his practice earlier by the same period of time. Translated in terms of savings and earnings, the student may enjoy the financial advantage in the amount of $7,500.

8. Avoid the dislocation of clinical and hospital services resulting from long summer vacations.

9. Enable the student to choose between the conventional four academic years and three calendar years to secure his dental training. If he elects the four academic years, he is not required to attend any portion of the summer clinics. Proof of the popularity of the Tennessee Plan among the students is shown by the fact that more than 99% elect it when financial resources are adequate.

10. Obtain the best possible returns from resources available to the University by the maximal use of the physical plant, scientific and technical equipment, and the services of administrative, clerical, technical, and custodial employees—thus conserving as much of the resources as possible for investment in faculty.

The College of Dentistry, College of Medicine, and the School of Biological Sciences are operating on the Four Quarter Plan—the College of Medicine for the past 28 years. The Schools of Pharmacy and Nursing are set up to operate on the Plan, but the number of qualified applicants to these schools does not justify its operation. If and when such numbers are available, these schools will also operate on the Plan.

On the whole, the trustees, the faculty, and students are highly pleased with the results of the Plan. A maximum number of dentists have been trained with the resources available and by the utilization of educational facilities to their maximum efficiency.

The Four Quarter Plan in dental education is adopted especially to meet the growing emergency now facing American dental schools. With minimal changes in physical plants and equipment, greatly increased admissions are possible and more dentists can be made available to the country promptly. Under the Plan, dentists can be graduated in three calendar years at smaller proportionate administrative and overhead cost.

More marginal students may be salvaged because of the opportunity to repeat by quarters rather than by academic years. Better standards may be enforced because of a greater willingness of teachers to retard students who would benefit by repetition. There is a better salvage of students who, because of illness or finances, find it necessary to drop out of school temporarily, but may return without loss of an academic year.

The Four Quarter Plan in dental education is not presented as the final solution to the problem of adequate dental manpower, but as a practical method of increasing promptly the number of well trained dentists. (Ginn, J. T., D. D. S., The Tennessee Four Quarter Plan in Dental Education after Ten Years: J. A. D. A., 56: 903-909, June 1958)

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Carcinoma of the Duodenum

This article reviews the diagnosis and treatment of carcinoma of the duodenum, brings up to date the literature on this subject, and more particularly reviews the experience of a large city hospital with this lesion.

The lesion may be seen as early as the third decade, but most commonly in the fifth and sixth. There does not appear to be any predisposition to race or sex. Although some believe this tumor is three times as common in males, in this series the proportion was three males to six females.

With the prevalence of upper gastrointestinal symptomatology and the present day proneness to obtain x-ray study, carcinoma of the duodenum may be seen before late complications augment its diagnosis. The usual symptoms associated with malignant disease, i. e., weakness, weight loss, anorexia, and anemia are present.

No characteristic signs or symptoms are consistently demonstrated with this lesion, although some authors report a relationship between the presenting complaints and the location of the lesion. Ochsner and Kleckner have reported that suprapapillary tumors produce symptoms of pyloric obstruction, and infrapapillary tumors, symptoms of gastrointestinal hemorrhage. Brenner and Brown on the contrary found that infrapapillary lesions caused obstruction more frequently than did suprapapillary tumors and noted no correlation between the site of lesion and hemorrhage.

The authors believe it is more important to recognize the four prime symptom complexes by which this lesion may present than it is to identify them with an anatomic location. These complexes may be grouped as follows:

Ulcer-like syndrome. The pain pattern may suggest peptic ulcer disease, but duodenal malignancy rarely awakens the patient at night. It is more commonly characterized by boring into the back and is rarely

complicated by hematemesis. It does not respond to an ulcer regimen (six of nine patients).

Gastrointestinal hemorrhage. This is manifested by weakness and tarry stools associated with anemia. Seven of nine patients reported this (100% of the infrapapillary lesions). Hematemesis was present in two patients.

Obstruction. This is suggested by early satiety, anorexia, and vomiting, and was seen in eight of the nine patients.

Jaundice. This is evident in lesions which are primarily ampullary or have extended to involve the ampulla. No patients in this report were so affected.

The treatment of this lesion is surgical excision. In former years, diagnoses were made so late that when patients came to surgery, palliation in the form of by-pass was all that could be offered. At the Philadelphia General Hospital, five of six patients who came to surgery received palliation. Because the growth of this malignancy is primarily of extension via lymphatic drainage from the superior and inferior pancreaticoduodenal and gastroduodenal lymph nodes to the hepatic nodes, and somewhat less to the superior mesenteric chain, a block resection including these structures should be the treatment of choice.

Advances in anesthesia and preoperative and postoperative care, plus more awareness on the part of the patient, allow extensive surgery to be undertaken sooner and with much less operative mortality. Cancer surgery implies removal of the lesion and its usual foci of spread. Although the survival rate following pancreaticoduodenectomy has been attended by discouraging follow-up figures, it would seem that the only hope of improvement in the treatment of this lesion lies in earlier diagnosis and more extensive surgical removal. With pancreaticoduodenectomy more commonly employed in the future than in the 60% of operable patients reviewed since 1948, the five-year survival rate might be improved. (Resnik, H. L. P., Cooper, D. R., Carcinoma of the Duodenum - Review of the Literature from 1948 to 1956: Am. J. Surg., 95: 946-950, June 1958)

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Jet Engine Noise and Loss in Human Hearing

A single modern pure-jet aero-engine is capable of producing a total noise level of 130 decibels (db) at 45 degrees to the main jet axis at a distance of 100 feet when the engine is at full thrust. Noise summates logarithmically and not mathematically so that a four-engined jet airliner can produce at full thrust a noise intensity of about 136 db. Much of this noise is contained in those frequency bands already known to be injurious to the human ear. The measured noise pattern in phase diagram analyses

about a jet engine show that there are two principal components: (1) a forward component containing many pure tones and which is of very high frequency character, and (2) a rear component which changes considerably with engine thrust, but is mainly distributed in all frequencies. The question is, who will be affected by this noise and how can these alarming levels of sound be reduced to tolerable and safe limits?

The persons affected can be grouped as follows: (1) air crews and passengers, (2) maintenance engineers employed in the test running of new or overhauled engines in test bed sites and maintenance engineers engaged in engine runups on the aircraft before service, (3) tarmac and traffic staff who deal with the aircraft and its passengers on takeoff and landing, and (4) an important group—the ordinary citizens who live and work in the vicinity of airports and along the fixed approaches to runways.

Potential pilot deafness has been well accepted for many years and principally occurs in that ear nearer the engine. Audiometry is a routine practice for flight deck air crew. Pilots are very conscious of their potential hearing loss because they have to pass frequent medical examinations which include hearing analyses.

From the passenger angle, the best protection is achieved by design. Although there is some economic disadvantage to the operator in placing the engine further outboard along the wing in relation to fuselage, this method does achieve considerable noise reduction inside the cabin.

A new approach to engine siting has been made by the French where twin engines are sited in the tail unit producing a remarkably quiet cabin. The British are specifying such siting of the four jet engines in some airliners.

For the protection of the maintenance employees, the test cell where an aircraft engine is test run must be completely soundproofed and all controls for the engine sited outside the cell with soundproofed observation windows. The exhaust is led off into a long muffler or detuner. Finally, the whole cell may be buried below the ground. For ordinary maintenance checks of engines in situ in the wing, the new detuners can reduce the level in all frequencies to about 100 db. The real trouble here is the jet gap between the exhaust and the entry to the muffler. It is impossible, so far, to muffle the forward noise at the air intake without damaging the engine. The use of earthbank, brick, or metal reflectors has not been very successful as the noise is transferred or reflected to other sites. Preemployment and frequently repeated audiometric analyses are essential for all exposed to these high intensity noise levels.

Improved types of ear defenders or ear mufflers are now available. The newest ones can produce reductions up to 30 db in all frequencies. Protective clothing or devices are rarely the correct means of overcoming an industrial hazard as the human element, unless outstandingly intelligent, is too irresponsible.

Industrial physicians working in civil and military aviation are alert to their responsibilities in this immensely problematical subject. They must point out the hazards, monitor the working population, and stimulate noise suppression programs. (McGirr, O. (England), Jet Engine Noise and Human Hearing Loss: Summaries of Papers presented at the XII International Congress on Occupational Health, Helsinki, Finland, 1-6 July 1957, III: 57-58) (OccMedDispDiv, BuMed)

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Problems in Military Audiometry

Some 71,000 veterans are receiving approximately three and one-half million dollars compensation per month for hearing handicaps. These veterans have defective hearing as their primary disability. In addition to this sum, approximately one million dollars a year is spent for hearing aids, batteries, repairs, et cetera. The total cost for these veterans exclusive of the cost for travel and medical treatment is approximately 43 million dollars a year.

If adequate audiometric examinations had been given to these veterans at the time of their induction into the Services, many of them would not now be receiving handicap payments for "service-connected hearing loss" and considerable sums of money would be saved annually. (Johnson, K. O., Ph. D. Veteran's Compensations for Hearing Loss: J. Speech and Hearing Disorders, 22: 731-733, December 1957) (OccMedDispDiv, BuMed)

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Industrial Ophthalmology

One of the most conspicuous advances in the field of industrial ophthalmology is the establishing of modern techniques for mass visual testing—in industry, for military services, and most recently, for automobile drivers' license testing.

The instruments that best serve this purpose are binocular and include a full battery of tests. These tests reflect visual skills essential in varying combinations towards effective visual performance. The skills of which one needs accurate knowledge are:

1. Uncorrected distance and near acuity
2. Corrected distance and near acuity
3. Distance and near muscle balance
4. Stereopsis
5. Color appreciation

Instruments for recording this basic information are in process of development in England, France, and elsewhere. All of the individual instruments used to measure the needed skills, such as wall acuity charts, yarn color tests, prisms used to detect phosis (muscle imbalances) and stereopsis are expensive and time consuming and give uncertain and variable results.

A complete record of a worker's visual findings at time of employment allows industry to place personnel properly, to have medicolegal security in the event of false claims for loss of vision, to have records which can be used as a comparison at time of periodic reexaminations and makes possible referral and salvage of persons developing eye defects of pathology. There is a vast accumulation of literature supporting the relationship of visual skills to accidents as well as to production efficiency.

Exhaustive research over the last fifteen years has revealed various categories of jobs which demand certain patterns of specific minimum visual skills. This information provides greater efficiency and safety. For example, a crane operator needs good distance acuity, normal muscle balance, and depth perception to function expertly and give safety to men working under him. On the other hand, an inspector or a small parts assembly worker (electronic equipment, ball-bearings, precision instruments) needs accurate near acuity, normal near muscle balance and, at times, both near stereopsis and color appreciation.

It is relatively simple as a part of general preemployment and/or preplacement testing to place the "round peg into the round hole"—i. e., matching physical capacity to job demands. The degree of emphasis of one or more visual skills establishes a pattern or "profile" which holds for groups of jobs. A pilot for commercial airlines, a worker in a forge shop, a skilled employee in final stages of radar assembly, or an operator in area at public transportation, railroad, or bus—each fall into a different classification with reference to minimum visual skills needed and in each instance this information is vital. (Kuhn, H. S., Recent Advances in Industrial Ophthalmology: Summaries of Papers presented at the XII International Congress on Occupational Health, Helsinki, Finland, 1-6 July 1957, III: 414-417)

(OccMedDispDiv, BuMed)

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Health Hazards of Epoxy Resins

Difficulties are encountered by many industries using epoxy resins. The ability of the material to severely sensitize personnel who contact it has in many cases restricted its use. The material can be used successfully and to great advantage when the personnel who are responsible for its manipulation in the "wet" state avoid contact.

The industrial hygienist should pay particular attention to training supervisors as to the potential problems involved. The principal points to stress are:

1. Avoid contact of fumes after materials are mixed.
2. Change protective clothing frequently.
3. Maintain good housekeeping within the work area.
4. Make frequent inspections of the work environment.
5. Provide adequate ventilation designed to handle the specific operation.
6. Work closely with the industrial physician and the industrial hygienist who are in the best position to advise on health hazards associated with epoxy resins.

Particular attention should be paid to the preemployment physical. Dark-complexioned persons should generally be chosen versus fair complexioned. Work histories should be studied for symptoms of former sensitivities. Work habits must be closely observed by the supervisor and work areas must be frequently checked for contamination by spilling or by drippings from forming tools. (Kingsley, W.H., Health Hazards and Control of an Epoxy Resin Operation: Am. Indust. Hyg. A. Abstracts, p. 35, April 21, 1958)

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Silicosis and Bronchogenic Carcinoma

Two cases of the infrequently reported association of silicosis and bronchogenic carcinoma are reported. Various opinions as to the interrelationship of these two disease entities are presented: i.e., the concept that silicosis predisposes to bronchogenic carcinoma; that no casual relationship exists between the two disease entities; and that silicosis constitutes a definite protection against attacks by bronchogenic carcinoma.

The difficulty of differential diagnosis between bronchogenic carcinoma, silicosis, and pulmonary tuberculosis is discussed. It is hoped that the presentation of these cases will stimulate further investigation into the association of silicosis and bronchogenic carcinoma. (Author's summary: Weissman, H., Silicosis and Bronchogenic Carcinoma: Am. Rev. Tuberc., 76: 1088-1093, December 1957) (OccMedDispDiv, BuMed)

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The printing of this publication was approved by the Director of the Bureau of the Budget, 19 June 1958.

Shook up by Sharks

An attempt has been made to follow through on a news report of an attack on a man by a shark at Port Edward, South Africa on 3 April 1958. The American Consulate at Durban has provided additional information. Between December 18, 1957 and April 3, 1958, there were six instances of surf bathers being attacked by sharks with the following tabulation of injuries:

Male, age 16 years - lost one leg
Male, age 14 years - killed
Male, age 23 years - killed
Female, age 14 years - lost left arm
(Male?) native, age 42 years - killed
Male, age 29 years - left arm ripped off, right arm off below elbow, abdomen and one leg mauled

In each instance, the victims were bathing in clear shallow water on a public beach at commonly used times. As usual, the species of shark involved is not known. In the last case, it was reportedly 10 to 15 feet in length.

This is a problem of economic importance to the resort towns along the Natal South Coast inasmuch as some quarter of a million vacationers flock to these beaches during the summer. At Durban, Natal alone, it is estimated that there are some 210,000 annual visitors representing a business turnover of some 7,000,000 Pounds. Durban protected its beaches with shark nets (original cost, 15,000 Pounds) which are regularly inspected and maintained. In the six years since their installation, there have been no "shark injuries" on the protected beaches. However, on April 2, 1958, three large sharks were found entangled in the nets: a 15-foot hammerhead weighing about 5000 pounds and two smaller lazy greys.

An interesting observation is that there had been no shark incidents along the Natal South Coast since 1954 until this past season. Does this suggest a periodic migration of sharks? or perhaps a periodic variation in food sources available to sharks? The need continues for thorough critical reporting of all such incidents. The Submarine Medicine Division, Bureau of Medicine and Surgery, and the Deep Sea Diving School will welcome such help from any source. (SubMedDiv, BuMed)

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From the Note Book

1. Rear Admiral B. W. Hogan, Surgeon General of the Navy, extended a "Salute" to all members of the Hospital Corps of the Navy on the occasion of the 60th Anniversary of the Corps on June 17, 1958. Established by Act of Congress in 1898 to assist medical officers in the care and treatment of sick and wounded Navy and Marine Corps personnel, the Hospital Corps has since compiled an enviable record.

Hospital Corpsmen assigned to the Second Marine Division, American Expeditionary Force, became the most highly decorated military unit of World War I. This Nation's highest award, the Congressional Medal of Honor, was presented to seven Navy Hospital Corpsmen in World War II and to five during the Korean conflict. Action above and beyond the call of duty has characterized Hospital Corpsmen both in time of war and in time of peace. In recognition of their outstanding service during World War II, the late James V. Forrestal, then Secretary of the Navy, awarded the Hospital Corps a Letter of Commendation - the only Corps within the Navy so honored. (TIO, BuMed)

2. Captain K. L. Knight MSC USN participated in the Pan American Sanitary Bureau/World Health Organization sponsored Seminar on the Susceptibility and Resistance of Insects to Insecticides, held in Panama City, Republic of Panama, June 23 - 28, 1958. (TIO, BuMed)

3. Commissioning ceremonies for the newly completed dispensary at Rota, Spain, were held on May 27, 1958, with Captain French Wampler USN, Commander of the U. S. Naval Activities at Rota, and Captain Edward P. Irons MC USN, Rota's Senior Medical Officer as principal speakers. This air conditioned dispensary will serve military and civilian personnel and their dependents who are serving with the Naval activities at Rota.
(TIO, BuMed)

4. The tenth Naval Research Reserve seminar held annually by the Office of Naval Research convened on 16 June 1958. During the seminar, approximately 100 scientists and engineers in the Naval Reserve as well as representatives of the Army and Air Force Reserves were brought up to date on current research and development activities in the Navy. The meeting is one of ten seminars throughout the country sponsored by the Office of Naval Research during fiscal year 1958 and is designed as active duty training.
(TIO, ONR)

5. During the last six months of 1957, about 25 million Americans were injured enough to require medical attention or to limit their activities for at least one day. Injuries during this period resulted in almost 214 million

days of restricted activity including 55.5 million days spent in bed at home or in a hospital. For this period, there were on an average about 1,175,000 persons every day whose activities were limited because of injuries, Of these, 305,000 were in bed or in a hospital each day. Of the total injured, 14.1 million were males and 10.8 million were females; 14.9 million were urban residents; 7.1 million were residents of rural-nonfarm areas; and 3 million lived on farms. (P.H.S., H.E.W.)

6. The New York City Health Department has announced a Health Show, a new health education project to be held in the New York Coliseum, August 6 - 23, 1958. Dr. Leona Baumgartner, New York City Health Commissioner, has invited national, state, and local official and voluntary health agencies to participate with presentations of exhibits and motion pictures. (United Public Relations, New York)

7. For the 5-month period ended May 31, 1958, the reported incidence of infectious hepatitis was only 7% below that for the same period of 1957, which represents a rather marked change in the trend in incidence of the disease. After 1954, which was a "peak" year in number of cases reported, there was a substantial reduction in incidence in each succeeding year until 1958. The number of cases reported in the first 5 months of 1955 was 33% below the figure for 1954; in 1956, the reduction amounted to 43% as compared with the previous year; and in 1957 the number decreased 24% below that for 1956. This change in trend in 1958 can be attributed in part or entirely to an actual increase in numbers of reported cases in 23 States and to to a very slight decrease in several others during the past 5 months as compared with the same period in 1957. (P.H.S., H.E.W.)

8. Fluothane is a potent and reversible anesthetic agent. The extreme potency is its greatest drawback, for special apparatus and high flow techniques are required for its safe administration. The authors believe that more than the ordinary amount of care will be required to achieve safe results if Fluothane is to be used routinely in the clinic with conventional apparatus and techniques. The eventual utility of Fluothane will be determined by further trial and eventual comparison with anesthetic agents now widely employed. (Anesthesiology, May - June, 1958; T.K. Burnap, M.D., S.J. Galla, M.D., L.D. VanDam, M.D.)

9. The use of modern electronic techniques for the evaluation of changes in the fetal heart rate during labor and delivery may permit a more valuable and accurate identification of fetal distress than is at present available by clinical methods. (Am. J. Obst. & Gynec., June 1958; E.H. Hon, M.D.)

10. The clinical findings in 5 infants with glycogen storage disease of the heart and skeletal muscle system are summarized. Emphasis is placed

upon the prominent role played by generalized muscle weakness and its complications rather than the cardiac manifestations. (J. Pediat., June 1958; S. Friedman, M.D., R. Ash, M.D.)

11. A review of the Abortion Service of the Harlem Hospital, New York city, is presented. The review represents the experiences of 25 years and includes approximately 15,000 cases of abortions of less than 16 weeks gestation. (Am. J. Surg., June 1958; M. L. Bobrow, M.D., S. Friedman, M.D.)

12. In 1957, primary and secondary syphilis declined slightly in the United States as a whole, but rose in 25 cities and 20 states. Early latent syphilis showed a very slight rise in the United States as a whole, but there was an increase in 19 cities and 21 states. (Editorial, J. Pub. Health, May 1958)

13. A method of bedside diagnosis of fractures by the use of alteration of sound conduction through bone, and requiring the stethoscope as the only instrument is presented in Surg. Gynec. & Obst., June 1958; J. C. Colwill, M.D., E.H. Berg, M.D.

14. A resume of the findings in 2000 cases in which patients complained of pain in the lower part of the back or sciatic pain or both is presented in Radiology, May 1958; R. K. Ghormley, M.D.

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IN MEMORIAM

CAPT John M. Woodard MC USN (Ret)	4 June 1958
CDR Adolph W. Meyers MSC USN (Ret)	6 June 1958
CDR Edward V. Valz MC USN (Ret)	9 May 1958
CDR Talmadge Wilson MC USN (Ret)	15 June 1958
LCDR Patrick A. Cole DC USN (Ret)	31 May 1958
LCDR Henry A. Thompson MSC USN	28 May 1958
LT James B. Latimer MC USN (Ret)	1 April 1958
LT Charles L. Marcantoni DC USN	15 June 1958
LTJG Mabel L. Powell NC USN (Ret)	26 May 1958
ENS Lucy H. Russell NC USN (Ret)	13 June 1958
CWO Frank R. Bork HC USN (Ret)	16 May 1958
WO Carl N. Vogt HC USN (Ret)	6 June 1958

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U. S. Naval Medical School Manuals

During the past two years, the Naval Medical School has written, revised, or republished ten (10) Laboratory Manuals outlining current laboratory procedures and courses of instruction. These manuals are available without charge on request to the Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md.

a. Urinalysis, Gastrointestinal Analysis and Endocrinology: In three parts. Part I: Chemical and microscopic examination of urine. Part II: Chemical examinations of internal secretions. Part III: Chemical examinations of gastric, duodenal and intestinal contents. Revised 1958, 126 pages.

b. Biochemistry: A manual of General Chemical Technique, Analytical Methods and Toxicology of biological fluids and tissues. Rewritten 1957, 359 pages.

c. Serology: An outline of the standard serological procedures in use at the U. S. Naval Medical School. Revised 1958, Illustrated, 112 pages.

d. Hematology: An outline of the chemical and microscopic examinations of whole blood. Part I: Plasma. Part II: Serum. Part III: Cellular elements. Revised 1956, Illustrated, 108 pages.

e. Blood Bank Procedure: A guide to the operating of a Blood Bank, Blood Transfusion Service, and Blood Donor Center. Revised 1956, 98 pages.

f. Medical Protozoology and Helminthology: Prepared as a guide for students of the Naval Medical School, and a ready reference for both physicians and technicians in the field of medical protozoology and helminthology. Illustrated. 219 pages.

g. Pathologic Technique: A guide to modern Pathologic Anatomy Technique which outlines the essential steps in the processing of tissues for pathologic examination. Revised 1957, 138 pages.

h. Bacteriology: An outline for the instruction and training of Clinical Laboratory Technicians in bacteriology, and a guide for the routine operation of a bacteriological laboratory. Revised 1958, Illustrated, 310 pages.

i. Fundamentals of X-Ray Physics and Technique: This manual is an outline of the basic x-ray technique course as taught at the Naval Medical School. It has been designed as a student textbook and a reference manual for x-ray technicians. Subjects included are anatomy, basic electricity, mathematics, radiographic technique, photodosimetry, photofluorography, special procedures, therapy, dark room technique, and office procedures. Revised 1958, 530 pages. Available for distribution 1 July 1958.

j. Laboratory Guide to Medical Entomology: This guide, now in preparation, will contain approximately 360 pages, and will become available in September 1958. It is intended to serve as a guide for students, and as reference material for entomologists, sanitary technicians, and medical officers. Subjects covered include systematic biology, medically important arthropods, insect anatomy, entomological techniques, and malaria control. Included are keys, both written and pictorial.

(NMS, NNMC)

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American Board of Obstetrics and Gynecology

Office of the Secretary

Robert L. Faulkner, M. D.
2105 Adelbert Road
Cleveland, Ohio

Applications for certification (American Board of Obstetrics and Gynecology) new and reopened, Part I, and requests for reexamination Part II are now being accepted. All candidates are urged to make such application at the earliest possible date. Deadline date for receipt of applications is September 1, 1958. No applications can be accepted after this date. It should be noted by prospective candidates that the deadline date will be August 1 in 1959.

Candidates are requested to write to the Office of the Secretary for a current Bulletin if they have not done so in order that they may be well informed as to the present requirements. Application fees ($35.00), photographs, and lists of hospital admissions must accompany all applications.

(ProfDiv, BuMed)

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DENTAL SECTION

46th Anniversary of Navy Dental Service

Rear Admiral Ralph W. Malone, Head of the Navy's Dental Service, announced that on August 22, 1958, the Dental Corps will commemorate the 46th anniversary of its establishment. On that date in 1912, President William Howard Taft signed into law the Naval Appropriation Act which included a provision for appointing "not more than thirty assistant dental surgeons . . . to serve professionally the personnel of the Naval Service." This infant Corps of thirty has grown to the present active duty strength of approximately 1700 Dental officers who are assisted by 3300 enlisted Dental technicians and 70 Dental Service Warrant Officers and Medical Service Corps officers. This dental care team provides treatment for the men of the Navy and Marine Corps in 400 dental facilities throughout the world.

Rear Admiral Malone stated that the Navy Dental Service has reason to be proud of its accomplishments during the past year when approximately eight million dental treatment and diagnostic procedures were provided for the personnel of the Navy and Marine Corps. In addition, the Dental Service met the need to provide routine dental care for military dependents in overseas bases as authorized by the 1956 Dependents' Medical Care Law. Admiral Malone emphasized that the accomplishments of the Navy Dental Service during the past year were due to the skill, loyalty, and teamwork of all Navy Dental personnel. He looks forward next year to a continuation of the improvement in the effectiveness of the Navy Dental Service which has marked its first 46 years.

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Fluoridation at Pearl Harbor

Almost 60,000 Navy and Air Force personnel, dependents, and civilian employees in the Pearl Harbor complex began drinking fluoridated water on May 12, 1958. All Island military housing areas except those at Barbers Point and Kaneohe—where pumping facilities are not yet available—are now receiving fluoridated water.

Action to start the fluoridation project in the Pearl Harbor area was initiated by the then District Dental Officer, Rear Admiral C. C. DeFord DC USN as soon as the Defense Department endorsed fluoridation of water

supplies as a public health measure at bases with dependent children in residence. Of the 59,600 persons now being served by the system, 13,000 are children sixteen years of age or younger.

The American Dental Association and the American Medical Association recommend fluoridation of drinking water as a major means of preventing tooth decay in children.

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RESERVE SECTION

Active Duty for Training During Fiscal Year 1959

The below listed courses are a continuation of the active duty for training authorized for fiscal year 1959 and published in the preceding issue of the Medical News Letter. Eligible interested Reservists should communicate with their naval district concerning assignment to these courses.

ON BOARD MSTS SHIPS

COMSTSLANT and
COMSTSPAC Areas
Description. On-the-job training to provide experience aboard ships
Eligibility Requirements. Any inactive Reserve Medical Corps or Nurse Corps officers
Quotas. No specific quotas assigned. Quotas are controlled by Chief of Naval Personnel. Reservists in Naval Districts 1, 3, 4, 5, 6, 8, and 9 are eligible for COMSTSLANT Area; those in Naval Districts 11, 12, and 13 are eligible for COMSTSPAC Area.

DISEASE VECTOR AND ECONOMIC PEST PREVENTION AND CONTROL

USN Disease Vector Control Center
U. S. Naval Air Station
Jacksonville, Fla.
1st Monday of Jan, Mar, Apr. Jun, Jul, Sep, Oct, and Dec; and
3rd Monday of Feb, May, Aug, and Nov.
Two weeks in duration
Description. Series of lectures, demonstrations, and field experience relating to vector and pest prevention and control procedures with special reference to naval preventive medical aspects. The role of insects, other

arthropods and rodents in the disease vector reservoir host relationship is given careful consideration. Recognition, identification, biology and habits of the vectors in relation to prevention and control are stressed. The types, procurement, toxicity, safe use, and proper choice and application of pesticides are dealt with. Recent advances and developments are brought out. Trainees are required to complete an individual project on some phase of insect and rodent control as assigned.
Eligibility Requirements. Naval Reserve CEC officers and Naval Reserve Medical Department personnel (including enlisted hospital corpsmen).
Quotas. Authorized for the 1st, 3rd, 4th, 5th, 6th, 8th, and 9th Naval Districts.

MILITARY ENTOMOLOGY

Naval Medical School
National Naval Medical Center
Bethesda, Md.
14 - 27 July 1958
Description. Two-week course in advanced Military Entomology for members of the military services which presents the nature of entomological problems which confront the Armed Forces; to stimulate scientific research in basic and applied problems which require attention.
Eligibility Requirements. Reserve Medical Service Corps officers whose specialty is entomology.
Quotas. Authorized for the 3rd, 4th, 5th, 6th, and 9th Naval Districts.

ON-THE-JOB TRAINING IN SUBMARINE MEDICINE

U. S. Naval Medical Research Laboratory
U. S. Naval Submarine Base
New London, Conn.
1st Monday in August and November 1958; 1st Monday in February and May 1959.
Description. On-the-job training presenting an up-to-date review of problems relating to submarine medicine, including recent developments in Submarine Medicine Research.
Eligibility Requirements. Naval Reserve Medical and Medical Service Corps officers. Male personnel only.
Quotas. Authorized for the 1st, 3rd, 4th, 5th, 6th, 8th, and 9th Naval Districts.

MALARIOLOGY AND INSECT CONTROL

U. S. Naval Air Station
Alameda, Calif.
1st and 3rd Wednesday of each month
Description. Up-to-date review of insect and rodent control operations, presenting information and techniques employed, including practical field experience.

Eligibility Requirements. Naval Reserve CEC officers and Naval Reserve male Medical Department personnel, including enlisted hospital corpsmen.
Quotas. Authorized for the 11th, 12th, and 13th Naval Districts.

FIELD MEDICINE
Camp Pendleton
Oceanside, Calif.
10 August 1958
13 October 1958
Description. Lectures, demonstrations, and practical exercises to familiarize Reserve Medical personnel with problems usually confronted and techniques to be employed in the application of field medicine. One week will be devoted to classroom work and one week to field work.
Eligibility Requirements. Naval Reserve male Medical Department personnel, including enlisted hospital corpsmen.
Quotas. Authorized for the 11th, 12th, and 13th Naval Districts.

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Legal Medicine - NavPers 10766

The Medical Department correspondence course, Legal Medicine, NavPers 10766, is available to Regular and Reserve officers and enlisted personnel of the Medical Department of the Armed Forces as well as officers of the U. S. Public Health Service and allied medical department officers.

The course is designed to acquaint personnel with the particularly important role that legal medicine plays in modern hospital administration. More and more people are now entering the areas of patient care and, although they assume their responsibilities trained and prepared to administer their varied activities, there is constantly present the element of possible liability for their acts.

This course coaches personnel subtly against their own legal concern as it discusses hospital organization, liability, care of the patient, confidential communication, and contractual relationships. Throughout the text material, legal and technical terms are simplified for the layman, and typical cases with legislative and court decisions are cited. Of special importance to the Naval Medical officer is the section entitled, Immunities and Liabilities of Government Hospitals, which enables him to apply the general information of the rest of the text material to his particular problems. The text for this course is Law of Hospital, Physician, and Patient by Hayt, Hayt, and Groeschel, 2nd edition, 1952. The course will prove to be an invaluable training for physicians, hospital administrators, and those concerned with the profession of medical and hospital care.

The course consists of eight (8) objective type assignments and is evaluated at twenty-four (24) promotion and/or nondisability retirement

points. Applications should be submitted via applicant's command, to the Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md. (Attn: Correspondence Training Division)

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PREVENTIVE MEDICINE SECTION

Practical Value of the Tuberculin Test

The tuberculin test has long been accepted as a simple and highly specific test for the presence of tuberculous infection, but its possibilities and its limitations tend to be overlooked. Studies done in recent years by the World Health Organization in connection with BCG vaccination programs and observations made by the U. S. Public Health Service and others have provided valuable information, but there is still much to be learned.

Significance of Dose of Tuberculin. There is a tendency to think of the tuberculin reaction as an "all or none" phenomenon, although every pediatrician has learned that there is a wide range of tuberculin sensitivity in any group tested. Usually, a tuberculin test is called positive or negative on the basis of size of reaction. If a Mantoux test is done, the indurations larger than 5 or 6 mm. indiameter are arbitrarily called positive, but there are many smaller than this which represent some degree of sensitivity. Are these people with just a little sensitivity infected with tubercle bacilli? Undoubtedly, some are, but there is now good evidence that many represent a cross sensitization with other antigens. Studies now in progress may reveal the nature of the antigen or antigens able to produce some tuberculin sensitivity.

These findings give additional emphasis to an earlier study with graduated dosage of Purified Protein Derivative (PPD) which showed that in tuberculous patients extremely small doses produce no reactors, but with a gradual stepping up of the PPD strength, an increasing percentage was positive until the dose of 0.0001 mg. was reached. At this point practically all persons with tuberculosis had a reaction of 5 mm. or more. If the dose was further increased, reactions were obtained in large numbers of children who were probably not infected.

This with other studies indicates that a standard dose of 0.0001 mg. of PPD is satisfactory for most purposes.

The size of the tuberculin reaction may also be of diagnostic and prognostic significance. Recent preliminary studies (unpublished) at Phipps Institute in Philadelphia indicate that the size of the tuberculin reaction is correlated with the probability of active tuberculosis; the bigger the reaction, the more likely it is that active disease is present.

Many observations point up the increasing usefulness of the tuberculin test to the pediatrician. The interpretations of various degrees of tuberculin sensitivity may be summarized as follows:

1. If a child has no reaction to 0.0001 mg. of PPD, there is little possibility that he has tuberculosis. Periodic testing, at least annually, would establish the approximate time of a tuberculous infection.
2. A low degree of sensitivity with induration under 5 mm. in diameter could be the result of some other infection or an insignificant tuberculous infection. The chance of active disease being present is extremely small.
3. With a reaction over 5 mm. in size the chances increase that active tuberculosis is present or will develop. Each child with such a reaction should have a thorough examination to confirm or exclude the presence of an active lesion. Most of such children will not have active lesions, but will have an increased risk as they go through the ages of 15 to 30, so long-term follow-ups and periodic examinations are important.

Effect of BCG on Tuberculin Test. If a child has a positive test when first seen by the pediatrician, it will be important to know whether BCG has been given or not. The reaction may be a result of the BCG inoculation. A positive test should lead to a search for tubercle bacilli if there is reason to suspect a virulent infection. Some children do acquire serious tuberculous disease in spite of a BCG vaccination.

Chemoprophylaxis in Tuberculin Positive Children. Isoniazid prophylactic treatment of tuberculin reactors to prevent the subsequent development of active disease has been advocated frequently in recent years. Perhaps, studies now in progress will provide more precise indications for chemoprophylaxis. At this time, however, opinion is divided and the physician will have to use his best judgment based on such things as recency of infection, the age of the child, the size of the tuberculin reaction, the presence of any lesions on x-ray, the presence of predisposing conditions, such as diabetes, and the future exposure to infection. Current investigations have confirmed the considerable risk of future disease in tuberculin reactors.

Tuberculin Testing in Community Case Finding. Tuberculin testing in private practice will pay an extra dividend in community tuberculosis control by providing leads to active cases which might escape detection.

If the test is positive in a young child, the infection must be recent and its source is likely to be an active case among his close associates. In older children, the source of infection may be more remote. The size of the reaction is important here too. Not only are those with larger reactions much more likely to have active tuberculosis, but higher rates of tuberculosis are found among their contacts. The physician can be of help to public health authorities by insisting that all associates of tuberculin reactors receive adequate examination.

Tuberculosis Testing as an Index to Tuberculosis Prevalence. The tuberculin test is a relatively simple and inexpensive procedure for determining infection rates in groups of children and adults. If these groups are retested at intervals, trends in the rates of new infection can be detected. It is quite clear from the evidence now available that infection rates have dropped markedly in the last few years in the United States. The need for more accurate measurement of tuberculin sensitivity is increasingly apparent. The only quantitative procedure now available is the Mantoux or intradermal test.

The patch test has been used extensively because of its convenience and the fact that no needle is necessary. However, it does have serious basic limitations and is not recommended. Many attempts have been made to improve patch test results, but the dose of tuberculin cannot be controlled because of the many factors which affect absorption of tuberculin through the skin.

Tuberculin Testing Schedule. A practical age schedule for tuberculin testing must always be a compromise. It seems to be common practice to test at least once each year as long as there is no reaction, substituting annual x-ray examination if the test becomes positive. Finding even an occasional new infection should be worth the little effort it takes in view of the risk to the child of future serious complication and the effectiveness of therapy.

If school children are being tested, the grades tested will depend somewhat on the number of new infections expected per year. In a low rate area, it may be sufficient to test beginning students in kindergarten or the first grade, children about to leave elementary school, and the last year in high school. In a high rate area, it may be worthwhile to test all grades every year. Such group tuberculin testing programs must be carefully planned so the essential follow-up of contacts will not be neglected and to provide for a critical evaluation at the end.

Tuberculin testing of children cannot take the place of the established public health program for tuberculosis control. Isolation and treatment of infectious patients, supervision of inactive cases, examination of contacts of active cases, x-ray screening of high rate groups, and programs to improve general public health are basic to any organized attack on the disease. However, routine tuberculin testing by all physicians coupled

with well planned group testing of school children and others in a community can provide additional information useful for a more direct attack on the disease with the present effective therapeutic tools.

(Feldman, F. M., The Practical Value of the Tuberculin Test: Pediatrics, February 1958; abstracted in Tuberculosis Abstracts, Nat. Tuberc. A., XXXI: 3, March 1958)

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Hospital Environment and Staphylococcal Disease

The strength of a hospital is especially the people who work there, but the place where they work has throughout history been of great importance to the fulfillment of their purpose. Although the hospital was intended to assist in the relief of distress and suffering, it has time and again served as a focus for the propagation of disease which has thwarted this purpose. This was a major reason why hospitals, prior to adoption of the principles promulgated by such leaders as Alanson, Collins, Semmelweiss, Nightingale, Lister, Simpson, and Schimmelbusch, were used mostly by the poor; the rich preferred medical care in the safer environment of their homes.

Progress in hospital care can be measured from the conditions existing in the Hotel Dieu in Paris in 1788: "There were some 1200 beds, most of which contained from four to six patients, and also 486 beds for single patients. The larger halls contained over 800 patients crowded on pallets, or . . . heaps of straw which were in vile condition. Acute contagious diseases were often in close relation to mild cases, vermin and filth abounded, and . . . the attendants . . . would not enter in the morning without a sponge dipped in vinegar held to their faces. Septic fevers and other contagia were the rule; the average mortality was about 20% and recovery from surgical operations was . . . a rarity."

Modern hospitals bear little resemblance to such progenitors, but the transition has been slow and laborious and for most hospitals it remains incomplete. Much remains to be done to approach Nightingale's precept that the hospital "shall do the sick no harm." Fortunately, the task of preventing cross-infection in hospitals is much lighter today than it was in earlier times when great mortality resulted from many parasites in addition to staphylococci; when cholera and typhoid decimated hospital as well as nonhospital populations; when diphtheria and smallpox were frequent threats; when 2944 of 7650 infants born in one hospital died during the first fortnight, largely of neonatal tetanus; and when puerperal sepsis was the scourge of most lying-in hospitals.

The major enteric diseases have largely yielded to improved community sanitation; immunization has virtually conquered diphtheria, smallpox,

and tetanus; and streptococcal disease has been much subdued by the antibiotics. Staphylococcal disease remains an insidious and frequently overlooked disease which has survived the onslaught of community sanitation, immunization, and the antibiotics, to emerge from hospitals as probably the foremost parasitic cause of death in many modern communities.

Prevention of staphylococcal disease begins with measurement of its occurrence; the contemporary inadequacy of such measurement jeopardizes achievement of the hospital's purpose. Mortality statistics as they are currently collected and analyzed provide little knowledge of staphylococcal disease. Studies have revealed discrepancy between actual cause of death and death certificate information.

A combination of factors produces this gross inaccuracy of mortality statistics: (1) Most physicians, including pathologists, ascertain only the anatomic site of infection at postmortem examination; rarely is a thorough attempt made to determine the etiologic agent; (2) When thorough postmortem examination is performed in an attempt to establish the etiology, the results of such studies are usually not available until after the death certificate has been sent to the local registrar and, therefore, the information is seldom entered upon the death certificate; (3) Virulent staphylococcal disease is usually acquired in hospitals and, therefore, it is listed as a complication of the disease which caused the patient to seek hospital care, e.g., heart disease, burns, or cancer, and because of the current standards for classification of deaths, such deaths are coded to the antecedent cause. There is an obvious need to encourage routine determination of the etiologic causes of death, their entry upon the death certificate, and coding of deaths to multiple causes.

Official health agencies have demonstrated little interest in determining the incidence and distribution of such staphylococcal diseases as osteomyelitis, mastitis, pyoderma, wound infection, and pneumonia. With increased recognition of the importance of staphylococcal disease as well as better understanding of its epidemiology a substantial need exists for official health agencies to maintain surveillance of its occurrence. In addition to gathering reports of staphylococcal or suppurative disease occurrence from physicians, hospitals, laboratories, schools, and public health nurses, much knowledge can be gained by means of special hospital and community surveys. Hospital surveillance can be achieved by a systematic check of all infections and deaths occurring in the hospital. Such surveillance should be guided by an "infection control committee" or a "hospital epidemiologist." Analysis of accumulated data can be facilitated by placing the data upon punch cards. Accurate and inexpensive community surveillance of neonatal and maternal morbidity and quality control of nurseries can be achieved by obtaining histories from mothers by telephone during their second postpartum month. Now, major reliance is placed upon measurement of morbidity and mortality for guidance of efforts aimed at preventing infection in hospitals. In

the future, however, more sensitive "quality control" of the hospital environment may be achieved by routine periodic measurement of the bacterial contamination of important environmental components, such as air, blankets, floors, and people.

There is a growing appreciation that a correlation does exist between staphylococcal contamination of the hospital environment and staphylococcal disease of patients and staff. No longer can staphylococci be regarded as necessarily ubiquitous in hospitals, nor discounted as "contaminants" when found in specimens from sick or dead patients. Hospital-acquired staphylococcal disease is now recognizable as a formidable contemporary cause of illness and death. Its prevention can be achieved by improved measurement of its occurrence, by forthright application of current knowledge and techniques to provide a thoroughly sanitary hospital environment. (Ravenholt, R. T., Ravenholt, O. H., Staphylococcal Infections in the Hospital and Community: Am. J. Pub. Health, 48: 277-287, March 1958)

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Frankenstein's Monster Was a Powderpuff

Frankenstein's Monster was a powderpuff compared with me. He could wreak havoc in only one place at a time, I strike simultaneously in many places—again and again.

I'm a manmade scourge. Man created me and I destroy him without compunction. He has developed serums and vaccines to control and eliminate natural diseases, but try as he might he has been unsuccessful in his efforts to destroy me. I become more prevalent and destructive every year. I kill thousands of men, women, and children, and cripple many thousands more. I destroy property, wreck homes, and smash families. I have no regard for the rich or the poor, the healthy or the lame—they are all the same to me—my objective is to damage and to cause misery.

I can be stopped, not by one man, nor yet by a group of men. Its going to take all men as well as a tremendous change in everyone's attitude to do it. You see, I am an automobile accident—conceived by carelessness, nurtured on discourtesy, and born of speed and reckless disregard for moral obligations. (Safety Review, OIR, 14: 14, September 1957)

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Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date

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items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be, nor are they, susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

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